

CONDUCTING ECONOMIC IMPACT ANALYSES

prepared by

Lewis E. Queirolo, Ph.D.

July 29, 2005

The following guidance pertains specifically to the preparation of “economic” and “socioeconomic” analyses associated with proposed management actions, whether initiated under Magnuson-Stevens, ESA, the MMPA, or other applicable law. While these analyses typically compliment, even build directly upon, physical resource assessments (such as, Environmental Assessments, Biological Opinions, or Environmental Impact Statements), they must be complete and internally consistent, in their own right. Whether “integrated” (e.g., EIS/RIR/IRFA) or submitted separately, the economic analysis should provide a reader, having no special knowledge of the issue at hand, sufficient information to understand: [1] the need for the proposed action, [2] the objectives being pursued, [3] the range of alternatives examined, [4] the relative implications of adopting each alternative, and [5] the likely attributable economic and welfare outcomes of the proposed action (e.g., who gains and loses; what is the likely nature, magnitude, and distribution of the economic and welfare impacts; do the ‘benefits’ justify the ‘costs’ (i.e., is there a Net National Benefit)).

An effective (read, “adequate”) economic analysis of a proposed management action will require some initial planning. The “*need for*” and “*objectives of*” the action should be clearly enunciated (e.g., within the Council’s Problem Statement, or the Biological Opinion). The suite of “*alternatives*” under consideration, including the *No Action* alternative, must also have been articulated by the decision-makers (i.e., it is not the responsibility, nor purview of the analyst to supply alternatives for analysis). The analyst’s first task should be to endeavor to identify *all* potentially impacted “groups” having a plausible linkage to the resource (e.g., a fishery, gear group, whale watching industry, dependent community) being addressed by the proposed action.

Consider making a list. Next to each “group”, describe (briefly) how one might ‘characterize’

the likely impacts (either adverse or positive), perhaps by alternative; and begin thinking about how one might 'measure' each (either quantitatively or qualitatively).

For any given suite of alternative actions, there will be some obvious potentially impacted groups. For example, an FMP action might be expected to impact a number of commercial sectors, both directly and indirectly. But, the challenge is to think more expansively. Impacts may also extend to many other groups and, as one considers the design of an RIR and RFAA, one should think about how those assessments might capture these effects, as well.

Ask, for example, how might consumers be impacted (e.g., increased prices, reduced supply, poorer product quality)? Who are the principal end users of the resource (i.e., domestic or foreign)? Are there 'trade' implications (e.g., will U.S. consumers be induced to 'substitute' away from the product in question, to an alternative product/species, perhaps imported from a foreign supplier? How might U.S. seafood market share be impacted)? Are there community and/or regional economic implications (e.g., increases or reductions in employment opportunities, community stability and economic welfare impacts, local tax revenue effects)? Are there 'spillover' effects (e.g., will there be displaced capacity and/or effort that might move into other fisheries; with what economic and welfare implications)?

The foregoing may highlight groups with either direct or indirect "market" linkages subject to change under the proposed action. But for some actions (perhaps especially those dealing with ESA, MMPA, EFH, or Protected Resources issues), it will be necessary to include among the list of potentially impacted groups, populations of individuals without a "market" linkage to their interest in the resource. These may include groups such as subsistence users, recreational users, even "non-user" or "passive-users" (e.g., those U.S.-citizens who value of the resource, but never intend to use it, or wish to maintain an 'option' to do so in the future, or wish to 'bequeath' the resource to future generations). The values each of these "non-market" user groups place on the resource (and therefore the value which may be impacted by a proposed action) are difficult to quantify, but *must* be included, even if only qualitatively, as one designs the economic impact analyses. Note that not every action will involve non-market user groups, but each analytical design should assess the 'likelihood' that such groups may be impacted.

Clearly, an economic impact analysis must encompass not only attributable effects imposed upon the people, businesses, and communities which directly use the resource, but also those that may be indirectly impacted by the action, whether through market mechanisms or through non-market relationships. The complexity of these relationships makes an economic analysis of the impacts of a management action at least as difficult a task as characterizing the “biological” and “ecological” impacts. Nonetheless, changes in the regulatory environment, attributable to both recent legislative and judicial actions, require an enhanced level of specific, and judicially reviewable, analysis of regulatory alternatives.

Economic analyses (with socioeconomic elements), contained respectively in an RIR and RFA, are required of the agency, under provisions of Executive Order 12866 and the Regulatory Flexibility Act (RFA). But, the Magnuson-Stevens Act, inclusive of National Standards, and the National Environmental Policy Act, also contain varying requirements for these sorts of considerations. If done *systematically* and with care, an RIR (and RFA) analysis will simultaneously satisfy all these requirements.

The RIR

What precisely does the Executive Order require of an RIR analysis? E.O.12866 states:

“In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.”

This is not to suggest that every RIR must meet the standards of a doctoral dissertation in

July 29, 2005

resource economics. Indeed, the guiding “requirements” for an RIR, enumerated in subsequent sections of E.O.12866, establish a very specific set of ‘threshold’ criteria, against which judgments about “*significance*” are to be measured.

Specifically, E.O.12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be “*significant*.” A “*significant*” regulatory action is one that is *likely* to: [emphasis added]

- (1) *Have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;*
- (2) *Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;*
- (3) *Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or*
- (4) *Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.*

The RIR is designed to provide information with which to determine whether a proposed regulation is likely to be “*significant*” (and, therefore, must be submitted to the Office of Management and Budget for review). That is, the challenge, as author/analyst, is to perform a level of analysis, and present a coherent description of the probable impacts, ... of each alternative... which permits an objective determination as to whether or not the proposed action is expected to reach *any* one of the threshold impact levels. In the course of this process, the ‘relative’ performance (e.g., costs, benefits, efficacy) of each competing alternative should emerge, especially if all the relevant groups (and their respective economic and socioeconomic interests) are represented in the assessment’s design and execution.

This may still seem rather abstract and theoretical. So, let’s examine, specifically, what *must* be included in an RIR, if it is to be judged ‘adequate’.

July 29, 2005

The minimum requirements for an RIR include:

- (1) a complete *quantitative* (to the extent practicable) description of the problem being addressed;
- (2) a clear description of the management objectives;
- (3) a comprehensive description of each alternative (including the 'No Action' alternative);
- (4) a thorough description of the expected effects (both positive and negative) of each alternative, on *each* potentially impacted group;
- (5) a *qualitative* analysis of the benefits and costs of each alternative, with a summary of the 'net National benefit' (or, 'net National cost'). When adequate data are available, expected benefits and costs should be quantified to the fullest extent that these can be usefully estimated.

Assuming that you are preparing an integrated EA/RIR/IRFA, (which is the *preferred* format) elements (1), (2), and (3) should already be present in the Introduction and EA portions of the document. They, nonetheless, should be reproduced in the RIR, since this analysis is intended to be "self-contained". That is, some reviewers (e.g., OMB) are expected to turn directly to the RIR, rather than wade through the EA-portion of the document. Policy requires that they be able, based solely upon the material contained in the RIR, to understand the action being proposed and its implications (at least its economic implications).

Element (4) requires the construction of a logical, and internally consistent, description of the characteristics of *each* alternative, and how each alternative, in turn, is expected to achieve the stated management objective. On the basis of this profile, the analysis must explain how each alternative may impact *each* "user group". Note, the list prepared in the pre-analysis design phase, of *all* 'potentially impacted groups', will guide the analyst through completion of this aspect of element (4).

One should endeavor to describe *each* potentially impacted group, in some detail. This should include (whenever possible, and as appropriate) the number and characteristics of the members

of each group (e.g., vessel counts, by gear-type, by size, by affiliation, by gross revenue category and breadth of economic activity; numbers, geographic location, affiliation, and types of processing; etc.). Then describe the nature (positive/negative, direct/indirect, market/non-market) of all expected economic effects attributable to the action, as well as the approximate magnitude, timing, and duration of these impacts... for *each* group... for *each* alternative! Creation of a tabular matrix has proven useful for organizing and presenting these categories, across alternatives, but with or without a table, clear explanatory *text* is fundamental to presentation of this portion of the analysis! Again, ‘quantify’ that which can be usefully quantified, include qualitative estimates of the rest... leaving none out! (Incidentally, if it’s not clear to you yet, from the foregoing, a complete and detailed accounting of the group members, by key characteristics (e.g., gross receipts, employee numbers, affiliations), will greatly facilitate completion of the RFA-portion of the integrated EIS/RIR/IRFA).

One useful exercise which I have employed to develop these impact characterizations is to ask, “what would (for example) this fishery have looked like in the most recent year for which we have data, if the proposed alternative had been in place?” On that basis, one may contrast: [1] the actual empirical observations one can cite (e.g., numbers of participants, by sector, vessel size, gear-group; ex vessel gross earnings; total landings, by sector, area, gear-type,; product mix and prices, first wholesale gross receipts; enforcement and management costs, etc.), with [2] reasonable expectations of each, that one can derive from knowledge of the industry (and from the underlying economic theory). For the most part, these “potential” outcomes will be obvious and, with experience, should present little difficulty for you. In the interim, you are encouraged to consult with me or another of your colleagues, if this process isn’t clear to you (e.g., ask NMFS Enforcement about likely changes in their costs).

Keep in mind that, within the RIR, one is attempting to assess the “incremental differences” (in economic terms) between each proposed alternative and the “Status Quo” (usually, the No Action alternative). Therefore, the empirical baseline against which one measures *each* potential action should always be that associated with the “state-of-management” which will exist, if no action is taken.

Because every action which you will be analyzing occurs within an existing management context, it is not necessary (nor appropriate) for you to address impacts which are beyond the

scope of action under consideration. For example, assume that one is analyzing a proposed action that would change a PSC bycatch cap. There exists a current cap (the status quo). The range of proposed actions under analysis likely includes a series of alternatives that would reduce that existing cap, each by a differing amount, or through a different mechanism. Your analysis should compare and contrast the expected economic costs and benefits of each alternative action, *relative* to the existing “status quo” condition. It is not necessary (indeed, it is not appropriate) to attempt to include (in this example) the residual impacts attributable to the remaining PSC bycatch amount above “zero”, which will occur even after the proposed action to ‘reduce’ PSC is adopted. This is so, because a “zero” bycatch amount was not among the alternatives considered under this action (recalling from E.O.12866 guidance that only “... *available regulatory alternatives...*” may appropriately be assessed in the RIR). Further, the ‘no action’ decision would leave the cap unchanged, clearly not resulting in a “zero” bycatch, either.

Having now completed the required descriptions of all expected economic impacts (costs and benefits), for *each* alternative and for *each* potentially impacted group, as measured against the ‘no action’ baseline, the last step in RIR preparation is to integrate the component parts from element (4). This will take the form (generally) of a *qualitative* summary of the likely “net benefits” or “net costs” of each alternative. This should yield some conclusions concerning the likely “net benefit to the Nation”, deriving from the proposed action (given that, by this point a “preferred alternative” will have either emerged on the basis of your analytical work, or [more likely] have been *specified* for you, by the Council).

Because, for the foreseeable future, it is unlikely that the agency will have the types and detail of data necessary to derive true “net benefit” estimates, this section will generally consist of statements which indicate that, on the basis of the foregoing analysis, and those empirical data which are available, it is “probable” that the preferred alternative, (1) will achieve the management objectives identified at the outset for this action, (2) will yield benefits in excess of the costs it imposes, and (3) is the ‘least-costly’ and ‘least-burdensome’ alternative among those available to the agency, while achieving the management objectives.

NOTE: The forgoing passage is NOT intended as ‘boilerplate’, so do not attempt to copy-and-paste this statement into your RIR! Within the specific context of the problem being analyzed, develop a set of summary statements (drawing on the material in elements 1 through 4), which

reflect these 'findings'.

Congratulations ! You should now have a "passable" RIR in front of you! So, let's continue on to the RFAA section of this integrated document.

The RFA

The Regulatory Flexibility Act has taken on new significance for the agency, in recent months. While there are several good sources describing why this is so, for our purposes here, it is enough to accept that the RFA is a significant element of most actions you will be analyzing. The agency is currently in the process of developing and adopting new "guidelines" for preparation of documents which comply with Reg. Flex. requirements. When these become available, the advice which follows *may* have to be revised. ***[Although originally penned in 1999, the preceding paragraph precisely reflects the circumstances which currently prevail within the Agency at this writing, in July 2005.]***

Essentially, the RFA is concerned with assuring that decision-makers *consider* any disproportionate economic impacts that an action may impose upon ***directly regulated*** 'small entities'... and alternatives that might potentially be taken to ***minimize*** these impacts. According to SBA, which administers compliance with the RFA, 'small entities' include: small businesses, small nonprofit organizations, and small governmental jurisdictions. The SBA has provided 'objective guidance' as to exactly what criteria are to be used to identify a 'small entity'. These are, for analytical purposes, not subject to debate or interpretation. *You should familiarize yourself with these specific criteria.* They may vary across applications. For example, what constitutes a 'small business' for purposes of a given Protected Resources action (e.g., impacting whale watching operators) may be based on different economic and size criteria than is the case for a fishery management action.

"A different size standard can be set for specific regulations if you do a notice and comment on the new standard (and for small businesses, consult with SBA)." [Dan Cohen, DOC GC, September 14 - 15, 1998]

In the fisheries management context, in general, if a ***fishing*** operation's total gross revenue (from July 29, 2005

all its annual activities combined) is less than \$3.5 million, it is 'small' for RFA purposes (unless the boat is jointly owned, in which case, the *aggregate* gross revenues of the entire parent operation must be considered). In practice, we often do not have adequately detailed ownership and affiliation information upon which to make these individual interpretations. Until (or unless¹) we do, **assume** fishing vessels with less than \$3.5 millions in annual gross receipts are 'small', for purposes of the RFA analysis. At present (2005), based upon written direction from NMFS HQ, catcher-processors (C/Ps) are to be evaluated for RFA size purposes, upon the same criterion as catcher vessels, i.e., <\$3.5 million annual gross receipts. In the case of C/Ps, annual gross receipts are measured at the first wholesale level. This criterion is under review by HQ, and **may** be modified in the near future.

Processors (including, motherships, inshore floaters, and onshore plants) are small entities if they employ fewer than 500 people (100 employees for secondary processors) ... full-time, part-time, temporary, or in any other capacity, when all of their operations, anywhere in the world, are combined. Often one does not have this level of information concerning the operational structure of such firms. Unless data (or other forms of public information) are available that indicate otherwise, assume all processors are 'not small', for purposes of RFA, in Alaska.

Again, in the fisheries context, 'small nonprofits' are defined to be independently operated and not dominant in their field. In practice, entities such as the CDQ groups qualify as 'small' under these criteria, for RFA purposes.

Similarly, any governmental jurisdiction with a population of fewer than 50,000 is 'small'. With few exceptions (e.g., Seattle, Anchorage), all the governmental jurisdictions likely directly regulated by a proposed action under consideration in an IRFA are regarded as 'small', for RFA purposes. ***If in doubt, consult the SBA definitions... or call me!***

What precisely constitutes "*significant*" and "*substantial*", as per RFA certification criteria, are in flux within the agency at the present time. The current set of numerical criteria, set forth in NMFS guidelines, have been rejected as "arbitrary", by SBA's Office of Advocacy. New criteria

¹ It is widely reported that specific catcher vessels (identifiable by name) in the BSAI pollock fishery are 'owned' by the onshore plants to which they deliver. These and similarly situated individual boats would not be 'small', within the RFA context. Likewise, all AFA cooperative member operations are affiliated and, by definition, do not meet the 'small entity' criteria.
July 29, 2005

are being developed.

Notwithstanding this complication, initially, the primary objective of an RFA is to determine ... on a “factual basis”... whether or not the action under consideration will result in... *“a significant (adverse) impact on a substantial number of small entities”*. If an agency can demonstrate that no significant impact will be imposed upon a substantial number of small entities, the agency may *“certify”* this finding, in which case, it is then exempt from further analytical requirements under RFA. In order to certify FONSI (I acknowledge that FONSI is typically associated with NEPA, but the acronym is still appropriate here), the agency’s finding ***must*** be based upon, and accompanied by, a ***quantitative*** analysis, which constitutes the “factual basis” upon which the certification decision is founded.

However, because (for the foreseeable future) we typically will not have the necessary, detailed empirical data on operational ownership, affiliation, contractual interdependence, etc., with which to conduct such a rigorous quantitative analysis ... we cannot, in most cases, provide the requisite factual basis upon which to certify . Even if we *sincerely believe* that the action in question will not result in a ... *significant (adverse) impact to a substantial number...*, absent a quantitative factual basis, we may not “certify”.

Therefore, it remains my advice that, except on the rare occasion in which there can be no question about ‘small entity’ impacts (e.g., an action which only regulated individual subsistence users, *ipso facto* there are no RFA ‘entities’ of any kind), prepare an Initial Regulatory Impact Analysis. The SBA requirements for preparation of an “adequate” IRFA are straightforward and substantially less rigorous, onerous, and burdensome, than are the demands of preparing and defending the ‘factual basis’ upon which to certify, given the state-of-the-data in the fisheries off Alaska. This advice is consistent with that given at the 1998 NMFS RFA Workshop, by Marian Macpherson, NOAA GC. Quoting Ms. Macpherson, *“It can require more hard data on impacts to certify an action (under our current guidelines) than to prepare an analysis. If there are any questions about an action’s impacts, it is better to do the analysis.”*

This brings us to another *fundamental* consideration in the RFAA process. When determining whether to certify, the question before the analyst is, ***“Will the proposed action likely have a significant adverse economic impact on a substantial number of small entities.”*** If, for any

reason, one cannot conclude it will not, then one must proceed to prepare an IRFA ... and the issues of “*significant and substantial*” are no longer the focus of the analysis. That is, “*significant and substantial*” are threshold criteria associated solely with *certification* under RFA. Once one concludes that certification of an action is not factually supportable, “*significant and substantial*” are no longer relevant considerations.

So, what must an IRFA include? Unlike the RIR, sections of the IRFA may rely (by reference) upon material and analysis contained in earlier portions of the document, if those earlier passages fully address the IRFA element in question. For example, the first requirement of the IRFA is : “*a description of the reasons why the action is being considered.*” Obviously, one will have exhaustively addressed this requirement in the Introduction, EA, and RIR sections of the integrated document. Provide the “element heading”, a brief transition statement, cite the appropriate section/page references from the EA and/or RIR, and move on.

IRFA requirement two asks for: “*a statement of the objectives of, and legal basis for, the proposed action.*” Here, again, one *must* have treated this issue in substantial detail in earlier sections. Provide an appropriate section heading, a brief “summary” of the requested topic, direct the reader to the relevant passages in the RIR and/or EA, and move on.

Requirement three includes, “*a description of, and when feasible, an estimate of the number of small entities to which the proposed action will apply.*” If you prepared a detailed description of the ‘potentially impacted groups’ in the RIR, this immediately drops out! If you did not break the groups down on the basis of ‘small’ and ‘not small’ criteria (e.g., annual gross receipts), you will need to perform that task in this section of the IRFA. This should not be a complex derivation, especially because NMFS typically will not have the level of detail on each operation with which to perform an exhaustive profile. Most often, one will likely fall back on the “rule-of-thumb” classifications, cited above (e.g., catcher boats with total gross revenues of less than \$3.5 million are ‘small’, etc.). Cite, also, to the RIR for greater detail, as appropriate. Note, too, the universe of small entities, for RFA purposes, includes *only* those that will be directly regulated by the proposed action. That is, if the rule does not require specific affirmative action by an entity, it is not among the population that is the subject of the IRFA. Indirect, induced, secondary, and distributive economic impacts are important concerns of any management action assessment ... but, they are appropriately the subjects of the RIR ... *not* the IRFA. [In the event

one does not do an RIR to accompany the action, but still must do an RFAA, then these issues should be treated in the EA.]

Element four of an IRFA should include: *“a description of the reporting, record keeping, and other compliance requirements, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or records.”* This is self-explanatory and will differ with every action. Some actions may have absolutely no additional reporting or record keeping requirements... in which case, simply say so. Others may involve some additional time and resources. In these cases, explain what these are, e.g., how much time, what level of sophistication or technical skills may be involved, and roughly how much it will cost each operator to comply. If, for example, an action will require every operation to make one additional data submission to NMFS, per week, and the submission will require 15 minutes of ‘crew-time’ to complete and transmit, estimate the total number of reports (weeks); multiple times 15 minutes; then, times a representative wage rate (say, \$15.00/hour). The result is your estimate of the reporting, record keeping, compliance burden, for the average operation, made necessary by the proposed action.

Note here that the agency’s (current) position is that only ***adverse*** impacts need be accounted for. If the new regulation *reduces* the reporting burden by 15 minutes per week, you will not typically include the “savings” estimate in your IRFA. This *may* change under guideline revisions being contemplated in headquarters. An advisory will be circulated, if this comes to pass.

The fifth requirement is, *“an identification, to the extent practicable, of all relevant Federal rules that duplicate, overlap, or conflict with the proposed rule.”* Generally, there will be none, and you will so report in this section. Consultation with NOAA GC might be in order, if there are any doubts.

And finally, your IRFA shall contain, *“a description and analysis of **any significant alternatives to the proposed action** [i.e., to the preferred alternative] that would accomplish the stated objective of the MFCMA and any other applicable statutes **and** that would ***minimize*** any significant economic impact on small entities.”* [emphasis added] The objective here is to assure that among the alternatives considered are any which have the potential to explicitly

accommodate the limitations unique to 'small entities', or relieve any disproportionate adverse economic burdens on this class of operations, while achieving the objectives of the action.

Typically, one or more of the alternatives under consideration will include provisions that can reasonably be characterized (in this section of the IRFA) as "accommodating" small entities. For example, one or more alternatives may fully or partially exempt small boats from certain provisions of the proposed action, or reduce the observer coverage requirements for small entities (and thus their costs), or modify reporting requirements in proportion to the size and sophistication of an operation. These "special provisions" should be explicitly cited in this section of this analysis, even if they are not adopted as part of the final action. If these provisions are among the alternatives included in the RIR, you will have provided the requisite "analysis" there, and you may reference the appropriate sections of the RIR to partially fulfill this IRFA requirement.

And just that simply... you have completed a document that meets... "the minimum requirements for the RIR and IRFA".

Before concluding my discussion of preparation of these documents, let me address the issue of "boilerplate" text. Boilerplate has become an institutional nicety, bordering on necessity. While it may serve a useful purpose by, for example, placing the analysis within a uniform regulatory, administrative, and/or legal context, each time you employ boilerplate, please take the time to read what you are including in the document, and adapt it as necessary to the specific action being analyzing. The 'cut-n-paste' function is quick, but it does not do the thinking for you... Save face! Read what you are incorporating... before someone else does!

Good luck and good writing !

July 29, 2005